

Instructions for Use

Leica EG1150 H

Paraffin Embedding Station



Leica EG1150 H V 2.5, English 09/2014

Order No.: 14 0388 81101 RevF

Always keep this manual with the instrument.
Read carefully before working with the instrument.

IMPORTANT NOTE

The information, numerical data, notes and value judgments contained in this manual represent the current state of scientific knowledge and state-of-the-art technology as we understand it following thorough investigation in this field.

We are under no obligation to update the present manual periodically and on an ongoing basis according to the latest technical developments, nor to provide our customers with additional copies, updates etc. of this manual.

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For the instrument serial number and year of manufacture, please refer to the nameplate on the back of the instrument.

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Assembly contracted to Leica Microsystems Ltd. Shanghai

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1.1 Symbols in the text and their meanings



Warnings
appear in a gray box and are marked
by a warning triangle .



Notes,
i.e. important user information appear
in a gray box and are marked by an
information symbol .



Solvents and reagents that are inflam-
mable are marked with this symbol.



This warning symbol indicates the sur-
faces on the instrument that are hot
during operation.
Avoid direct contact to prevent risk of
burning.

(5)

Figures in brackets refer to item num-
bers in figures.

ENTER

Function keys that have to be pressed
on the input screen, are displayed in
bold type and capital letters.



Manufacturer



Observe the Instructions for Use



Date of manufacture



This product fulfills the requirements
of the Council's Directive 98/79/EC
concerning in vitro diagnostics (IVD)
medical devices.



Environmental protection symbol of the
China RoHS directive. The number in
the symbol indicates the "Environment-
friendly Use Period" of the product. The
symbol is used if a substance restricted
in China is used in excess of the maxi-
mum permitted limit.



Symbol for labeling electrical and elec-
tronic equipment in accordance with Sec-
tion 7 of the German Electrical and Elec-
tronic Equipment Act (ElektroG). ElektroG
is the law regarding the sale, return and
environmentally sound disposal of electri-
cal and electronic equipment.

REF

Order No.

SN

Serial number



Symbol for alternating current



Tip-n-Tell indicator to monitor wheth-
er the shipment has been transported
and stored in upright position accord-
ing to your requirements. With a pitch
of 60° or more, the blue quartz sand
flows into the arrow-shaped indicator
window and sticks there permanen-
tly. Improper handling of the shipment
is immediately detectable and can be
proven definitively.



In the Shockwatch system, a precision
glass tube shows shocks or impacts
that are above a specified intensity
through red coloration. Exceeding a
defined acceleration (g value) destroys
the surface tension of the liquid in the
interior of the tube. This causes the
indicator tube to change color.

1. Important Information

1.2 Intended use of instrument

The Leica EG1150H is a modern paraffin embedding station with microprocessor control system. It is designed for embedding histological tissue specimens in molten paraffin for use in pathology laboratories and only for the following tasks:

- Melt solid paraffin for sample embedding and maintain the molten paraffin at the required temperature.
- Pour paraffin into embedding molds where the specimens are placed.
- Heat and maintain the temperatures of embedding cassettes with specimens and molds as well as the required forceps.

Any other use of the instrument will be considered as improper use!

1.3 Qualification of personnel

- The Leica EG1150H may be operated by trained laboratory personnel only.
- All laboratory personnel designated to operate this instrument must read these Instructions for Use carefully and must be familiar with all technical features of the instrument before attempting to operate it.

1.4 Instrument type

All information provided in these Instructions for Use applies only to the instrument type indicated on the cover page.

A name plate with the serial number is attached to the back of the instrument.



Fig. 1 is provided as an example only and shows a valid nameplate for this instrument with the necessary information about instrument type and power requirement. The precise data for the various versions is specified in Chapter 3.1, "Technical data".

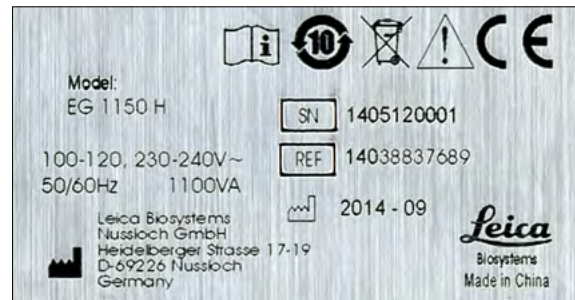


Fig. 1



The safety and caution notes in this chapter must be observed at all times. Be sure to read these notes even if you are already familiar with the operation and use of other Leica products.

2.1 Safety notes

These Instructions for Use include important instructions and information related to the operating safety and maintenance of the instrument.

The Instructions for Use are an important part of the product, and must be read carefully prior to startup and use and must always be kept near the instrument.

This instrument has been built and tested in accordance with the safety requirements for electrical equipment for measurement, control, and laboratory use.

To maintain this condition and ensure safe operation, the user must observe all notes and warnings contained in these Instructions for Use.



These Instructions for Use must be appropriately supplemented as required by the existing regulations on accident prevention and environmental safety in the operator's country.



The protective devices on the instrument and its accessories must not be removed or modified. Only service personnel qualified by Leica may repair the instrument and access the instrument's internal components.



Use only the provided power cable - this must not be replaced with a different power cable. If the power plug does not fit in your socket, contact our service.



Residual risks

The instrument has been designed and constructed with the latest state-of-the-art technology and according to recognized standards and regulations with regard to safety technology. Operating or handling the instrument incorrectly can place the user or other personnel at risk of injury or can cause damage to the instrument or other property. The instrument may be used only as intended and only if all of its safety features are in proper working condition. Malfunctions that impede safety must be remedied immediately.



For current information about applicable guidelines, please refer to the CE declaration of conformity and on our Internet site at:

<http://www.LeicaBiosystems.com>

2. Safety

2.2 Warnings

The safety devices installed in this instrument by the manufacturer only constitute the basis for accident prevention. Operating the instrument safely is, above all, the responsibility of the owner, as well as the designated personnel who operate, service or repair the instrument.

To ensure trouble-free operation of the instrument, make sure to comply with the following instructions and warnings.

Warnings – Safety notes on the instrument itself



Safety notes on the instrument itself, which are marked with a warning triangle, indicate that the correct operating instructions (as defined in these Instructions for Use) must be followed when operating or replacing the item marked. Nonobservance can cause accidents, injuries and/or damage to the instrument/accessories.



Certain surfaces of the instrument are hot during operation under normal conditions. They are marked with this warning sign. Touching these surfaces can cause burns.

Safety instructions - transport and installation



- After unpacking the instrument it may only be transported in an upright position.
- Place the instrument on a laboratory table and adjust it to a horizontal position.
- The instrument must not be exposed to direct sunlight (window)!
- Plug the instrument only into a grounded power socket. The protective effect may not be eliminated by an extension cable without a protective grounding conductor.
- The instrument automatically recognizes the applied voltage/frequency.
- The installation location must be well-ventilated; there should be no ignition sources there of any kind.
- The instrument may not be operated in hazardous locations.
- Extreme temperature fluctuations between storage facility and setup site as well as high humidity may cause condensation to form. In this case, wait at least two hours before switching on.



Safety instructions - working with the instrument

Paraffin is flammable and should therefore be handled with due care. Do not use sharp tools to remove solidified paraffin from the work areas, as this may destroy the coating on the surface. Use the plastic spatula supplied with the instrument.

During operation, the paraffin reservoir, embedding mold tray, cassette tray, work area as well as the forceps holder are hot.

Risk of burning!

Do not store any combustible and flammable substances near the instrument. There is a fire hazard if work with an exposed flame (e.g. Bunsen burner) is carried out in the direct vicinity of the instrument (solvent vapors). Therefore, keep all ignition sources at least 2 meters away from the instrument!

Hazards - servicing and cleaning



Switch off the instrument each time before servicing and pull out the power plug.

When using cleaners, please comply with the safety instructions of the manufacturer and the laboratory safety regulations.

Before changing defective fuses, the instrument has to be disconnected from the power supply.

Only fuses that are easily accessible may be replaced by the user.

Liquid must not get into the instrument while operating or cleaning it.

2.3 Integrated safety devices

The instrument is equipped with the following safety features and devices:

Fuses in the heating elements

All of the instrument's heating elements are equipped with overheating fuses, which trip if a heating element overheats and switch the element off.

Automatic circuit breaker in standby switch

An automatic circuit breaker is located in the standby switch. This circuit breaker separates the power electronics from the power supply in the event of a short-circuit.

In this case, the standby switch jumps to the position "0" = **Off**.



Note that the only way the user has for complete disconnection from the power supply is disconnection of the power plug.

3. Instrument Components and Specifications

3.1 Technical data

General data

Approvals:	The instrument-specific approval marks are located on the rear panel of the instrument next to the type plate.
Voltage of power supply:	100-120 V, 50/60 Hz 230-240 V, 50/60 Hz
Power consumption:	1100 VA
Protection class ¹⁾ :	I
Pollution degree ¹⁾ :	2
Overvoltage category:	II
Operating temperature range:	+18 °C to + 40 °C
Operating temperatures:	55 °C to 70 °C, adjustable in 5 K increments.
Relative humidity:	Max. 60 % non-condensing.

¹⁾ according to IEC-1010, UL 3101, EN 61010

Fuses

Standby switch:	Circuit breaker manufactured by ETA, model 3120-F421-P7T1-W01D-5A
Fine-wire fuses 6.3 x 32 mm:	2x T2.0 A; 2x T4.0 A; 4x T5.0 A; 2x T6.25 A
Fuse type:	Schurter: Type Fst

Dimensions and weights

Dimensions:	
Height:	360 mm
Width:	500 mm
Depth:	640 mm
Weight:	Approx. 22 kg

Capacities

Paraffin reservoir:	Approx. 3 l
Cassette tray:	Approx. 100 cassettes
Embedding mold tray:	Approx. 50 embedding molds

Programmable parameters

Temperature:	Paraffin reservoir/dispenser (heating-up time = 4 h) Embedding mold tray, cassette tray, work top
Time:	Working day, current weekday Working times (start, end), current time

3. Instrument Components and Specifications

3.2 Overview — instrument components

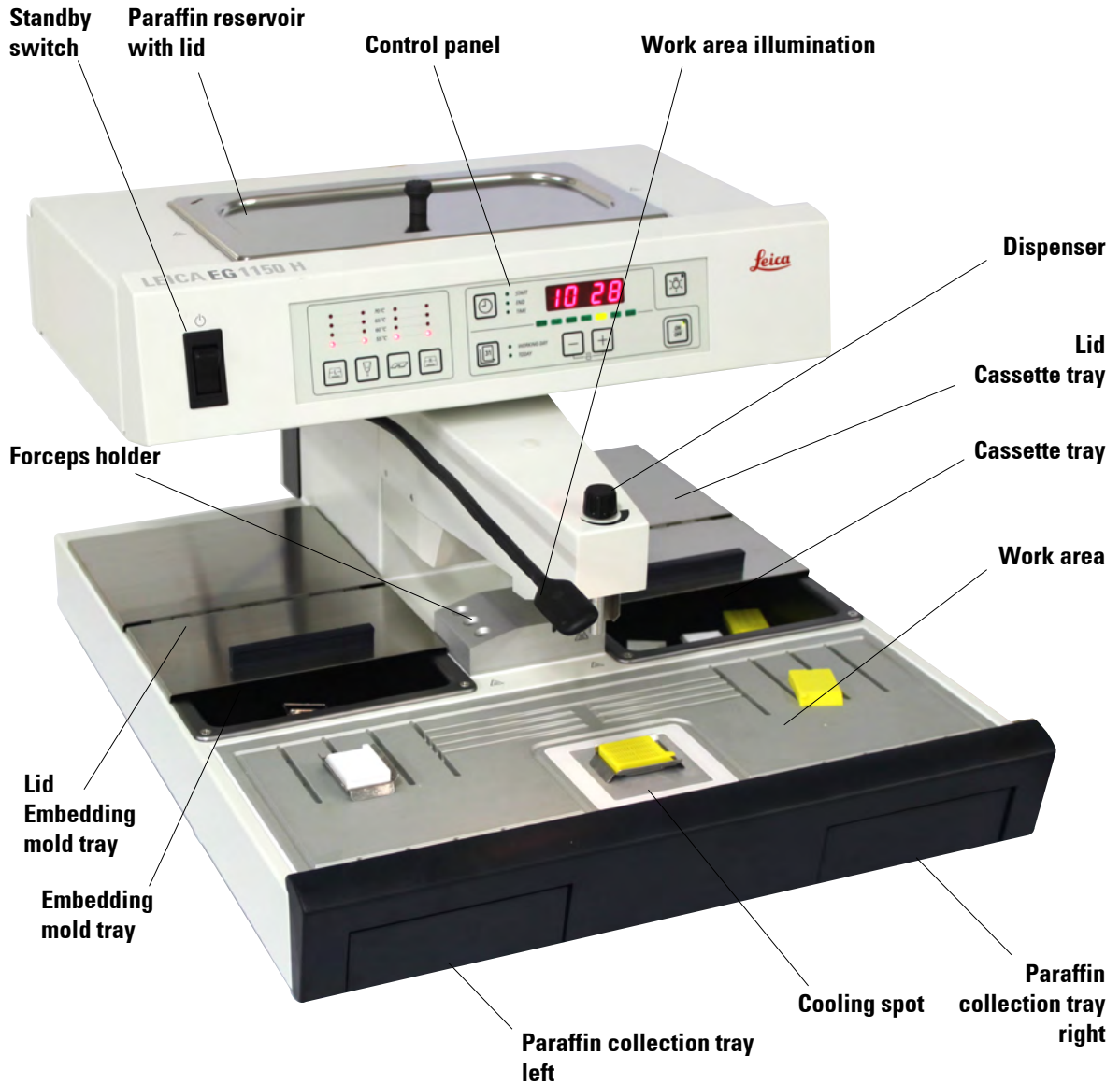


Fig. 2

3. Instrument Components and Specifications

Instrument rear view

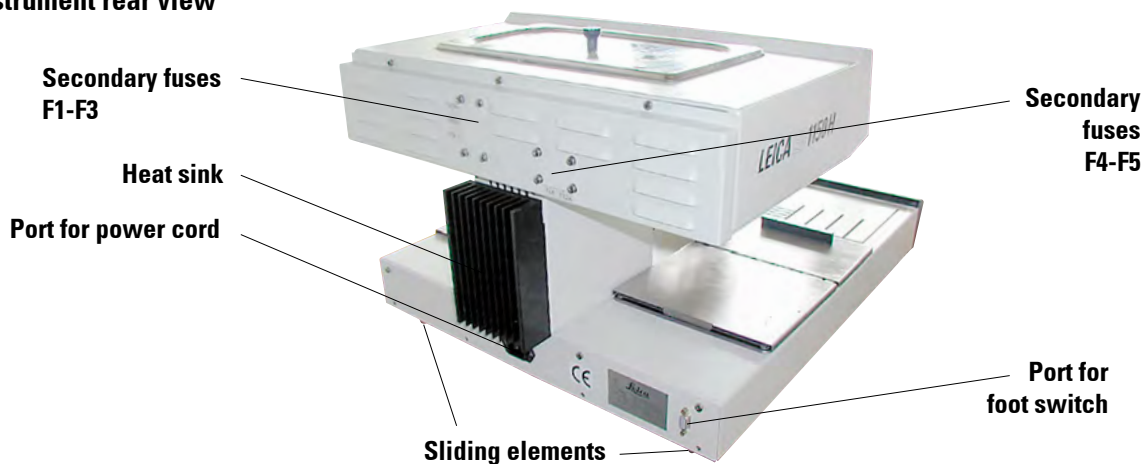


Fig. 3

3.3 Instrument specifications

- Paraffin reservoir with a capacity of 3 liters.
- The paraffin flow is activated by means of a height-adjustable, pivotable clip - activated either manually by the mold or a foot switch (optional).
- Controllable flow rate.
- Removable, heatable (indirectly, via the work surface) paraffin collection trays.
- Spacious, easy-to-clean, heated work area, with integrated cooling spot, also for extra large cassettes ("Super Mega Cassettes") with paraffin drain system.
- Trays for cassettes and/or molds with sliding lid, removable and interchangeable.
- Removable, heated forceps holder for 6 forceps, accessible from both sides.
- Optimum illumination of the work surface by the individual adjustable LED lamp.
- Temperature range of cassette and embedding mold tray, work area and paraffin reservoir adjustable from 55 °C to 70 °C.
- Permanent temperature display for all the work areas.
- The beginning and end of the work time and work days can be programmed.

4.1 Unpacking and installation



When the instrument is delivered, check the tilt indicators on the packaging. If the arrowhead is blue, the shipment was transported laying flat, was tilted at too great an angle or fell over during transport. Note this on the shipping documents and check the shipment for possible damage.




These unpacking instructions only apply if the box is placed with the symbols  facing upwards for unpacking.



Fig. 4

1. Remove 8x screws (1) for the cover (2).
2. Remove the cover (2).
3. Lift up and remove the accessories (3) and inside cover (4).

4. Instrument Setup

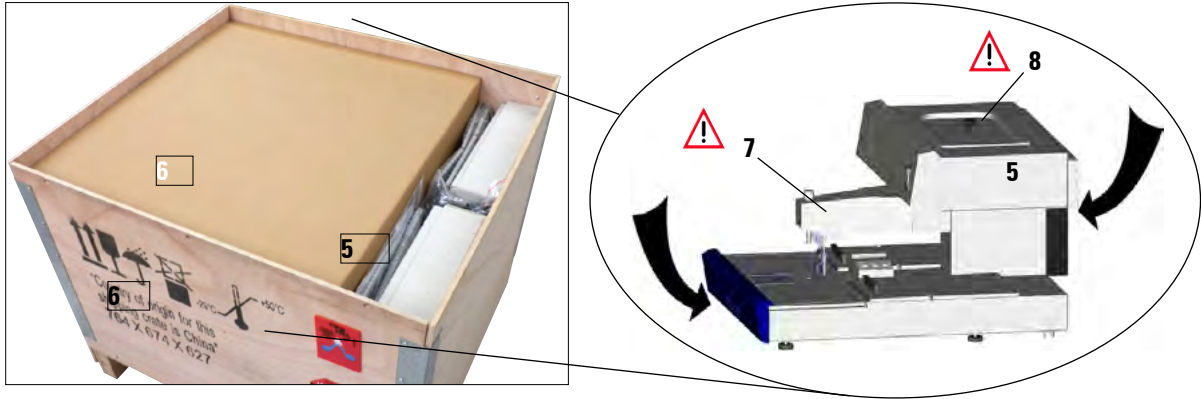


Fig. 5

4. In order to lift the instrument (5) take hold of it only at the lower housing base in the front and rear (arrow in the detail for Fig. 5) and lift it off of the bottom pad and out (6).



Important!

Lifting the instrument by the dispenser (7) or paraffin reservoir (8) can cause serious damage.



The packaging must be retained for the duration of the warranty period. To return the instrument, follow the instructions above in reverse order.

4.2 Location conditions

- Stable, vibration-free laboratory table with horizontal, flat table top, as far as possible vibration-free ground.
- The instrument must not be placed in the vicinity of the air outlet of an air conditioner and must be shielded from strong sunlight (window).
- To ensure a fully functional heat sink, there must be gap of at least 15 cm behind the instrument.
- The vicinity of the work area must be free of oil and chemical vapors.



The installation location must be well-ventilated and free of ignition sources of any kind. The instrument should not be operated in hazardous locations.

4.3 Delivery range

The standard equipment for the Leica EG1150 H contains the following components:

1	basic unit Leica EG1150 H	
1	Power cable, dependant on country specifications	
	Power cable "BR"	14 0411 47870
	Power cable "EU"	14 0411 33613
	Power cable "UK"	14 0411 33614
	Power cable "USA"	14 0411 33615
	Power cable "China"	14 0411 32591
2	cassette or embedding mold trays, removable	14 0388 32522
2	lids for cassette or embedding mold trays	14 0388 32480
1	lid for paraffin reservoir	14 0388 33148
1	paraffin scraper	14 0388 33133
1	forceps holder, removable	14 0388 32497
1	filter screen with holder	14 0388 32208
2	paraffin drip trays	14 0388 38138
1	LED lamp (12 V, 0.5 W)	14 0388 32464
1	set of spare fuses:	14 0388 46335
	2 fuses T 2.0 A	14 6000 01479
	2 fuses T 4.0 A, 6 x 32	14 6000 01480
	4 fuses T 5.0 A, 6 x 32	14 6000 01481
	2 fuses T 6.25 A, 6 x 32	14 6000 01482
1	Instructions for Use bundle Leica EG1150 H (Instructions for Use & language CD)	14 0388 81001



Please compare the delivered components against the packing list, delivery note, and your order. Should there be any discrepancy, please contact the Leica distributor handling your order.

4. Instrument Setup

4.4 Necessary assembly work

Install the following accessories and make the appropriate adjustments to make the instrument ready for use:

- Install accessories.
- Adjust instrument feet if necessary.
- Install magnifier (optional).
- Connect foot switch (optional).
- Connect to the power supply.

Install accessories

- ① Install embedding mold tray **(2)** and cassette tray **(3)**.
Depending on the preferred working direction, the two heated trays **(11)** can be used for molds or cassettes as required.
- ② Close mold/cassette tray with the corresponding lids **(4)**, **(5)**.
- ③ Push the paraffin collection tray **(6)** into the respective guide underneath the work top.
- ④ Insert the forceps holder **(1)**.
- ⑤ Insert the filtering screen **(7)** in the paraffin outlet hole **(8)** inside the paraffin reservoir so that the black O-ring seals the hole.
- ⑥ Place the lid **(9)** on the paraffin reservoir.

Adjustable instrument feet

The four feet are height-adjustable to allow the instrument to be adjusted to match the height of other devices or to compensate slight depressions on the surface.

Lift the instrument slightly and turn the instrument foot **(10 in Fig. 6)** to adjust it to the proper height.



To ensure a safe stand, all of the four feet must be adjusted to the same height.

Installing the accessories

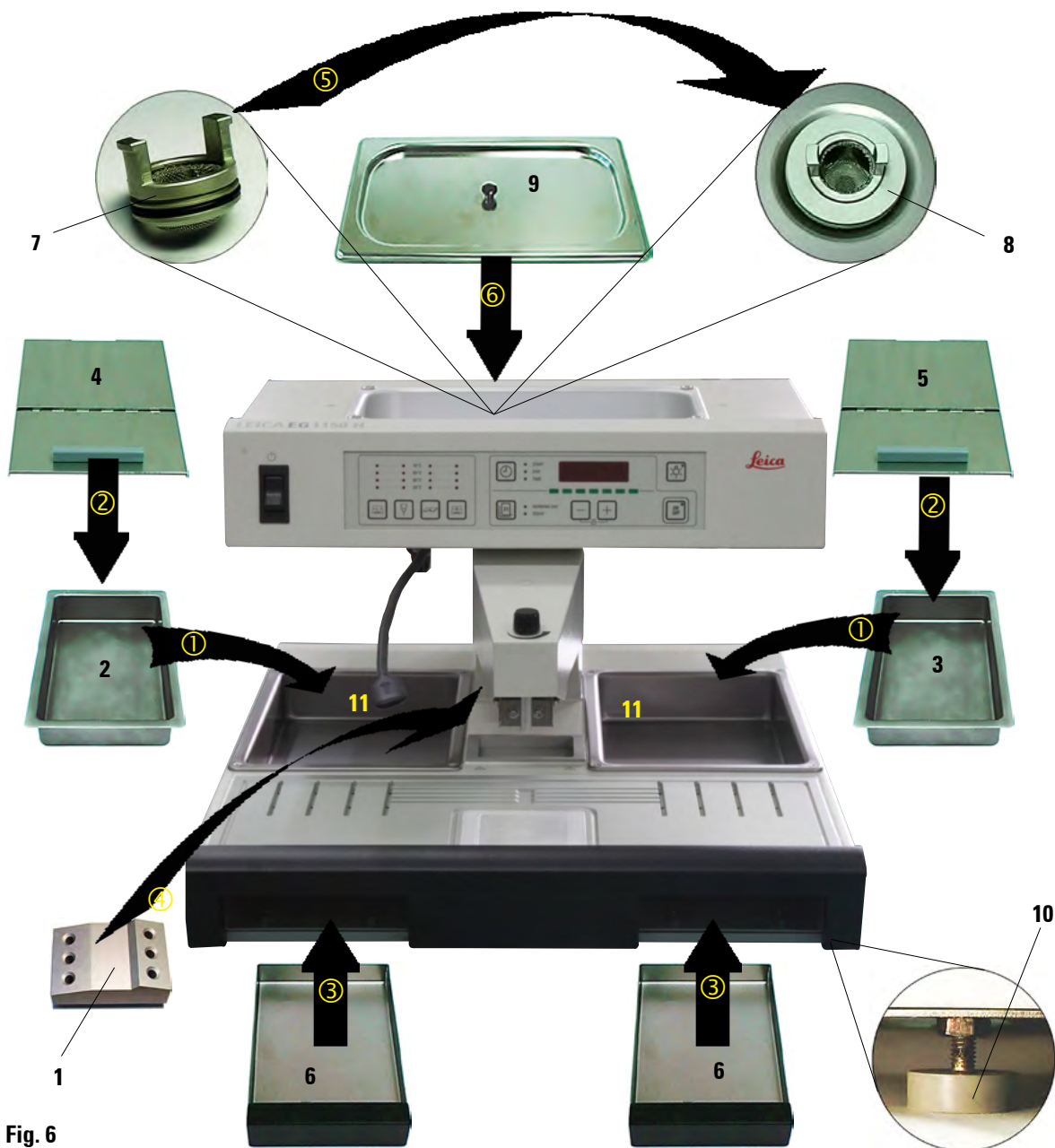


Fig. 6

4. Instrument Setup

4.5 Optional accessories

Magnifying glass

The magnifying glass provides a magnified view of the work area. When properly adjusted, an enlarged view of the dispenser and cooling spot is available.

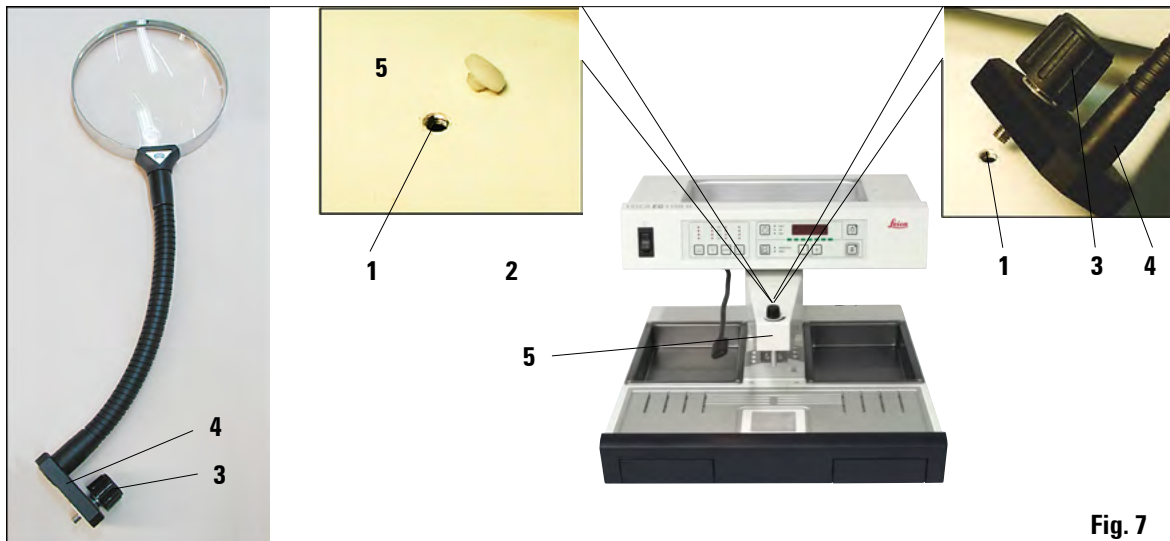


Fig. 7

Installing the magnifying glass

- On the dispenser (5) a tap hole (1) is provided, which is closed with a nylon screw (2).
- Remove the screw (2) with a screwdriver and store it in a safe place. Then screw the knurled screw (3) of the stand (4) firmly into the tap hole and align the magnifier.



Fig. 8

Foot switch

The foot switch can be used to actuate the dispenser valve, leaving the operator's hands free.

- To connect and use the foot switch, see [Chapter 4.6](#) and [5.1](#).

4.6 Electrical connection



The instrument **MUST** be connected to a grounded power socket. The instrument is supplied with a set of different power cords. Only the power cord intended for the local power supply (socket) may be used. Do not use an extension cord.

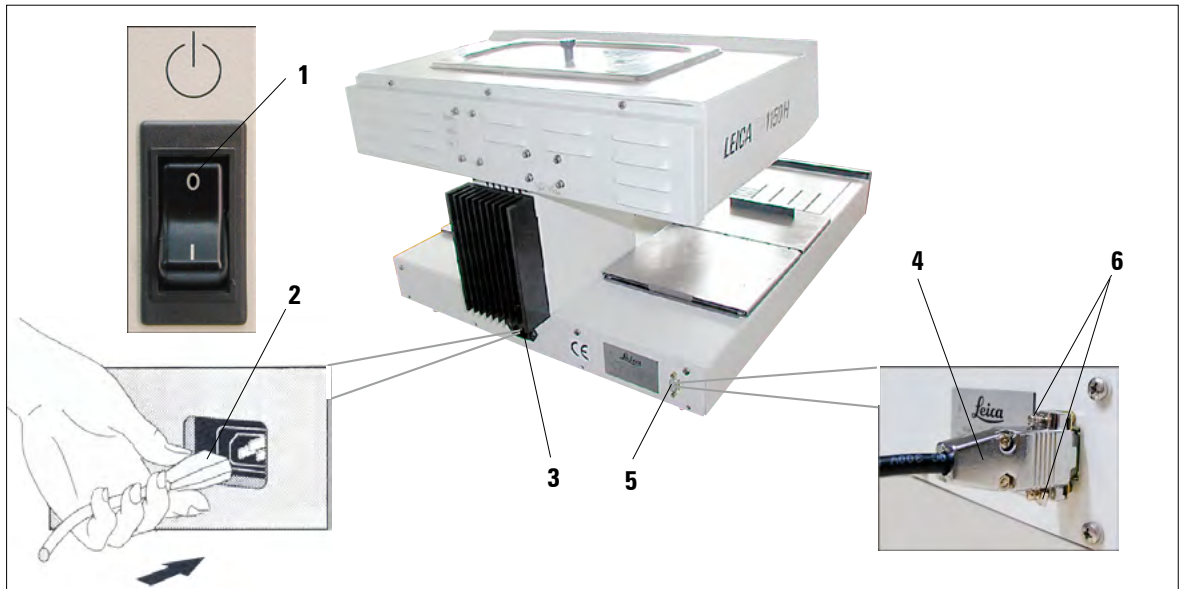


Fig. 9



Before connecting the power cord to the foot switch, ensure that the standby switch (1) (control panel, front) is set to "0" ("0" = OFF).

Connecting the power cord

- Connect the plug (2) of the power cord to the connection socket (3) on the rear of the instrument.
- Plug the power cord into the wall outlet.

Connecting the foot switch (optional)

- Insert the plug (4) of the foot switch into the connecting port (5) on the rear of the instrument.
- Tighten the screws (6) of the plug.

5. Operation

5.1 Instrument parts/functions

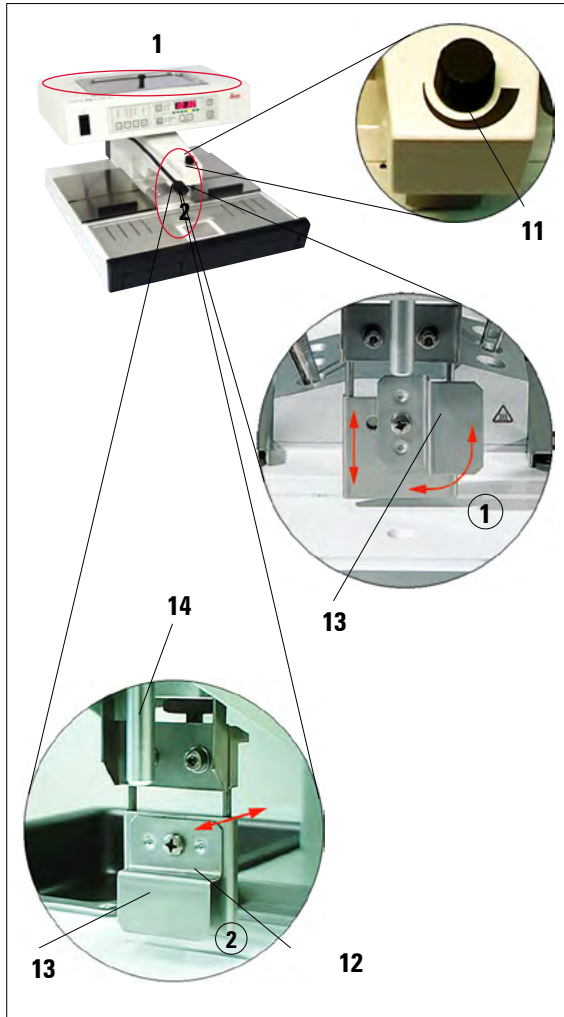


Fig. 10



The flow cannot be stopped completely with the metering screw (11). It must not be turned while cold!

Paraffin reservoir (1)

The paraffin reservoir has a capacity of approx. 3 liters. The paraffin temperature can be set between 55 °C and 70 °C in 5 K increments. The lid should always be in place otherwise the adjusted temperature cannot be maintained.

An overtemperature cutout is provided to prevent overheating the paraffin if temperature control fails.

A built-in filtering screen prevents any particles contained in the paraffin from getting in the paraffin block.



Recycled paraffin may NOT be used in the Leica EG1150 H due to the danger of contamination.

Dispenser (2)

The dispenser is heated separately. The temperature setting of the dispenser and paraffin reservoir is coupled.

The quantity of paraffin released from the filler tube (14) can be adjusted continuously with the metering screw (11).

The dispenser handle (12) is used for manually operating the paraffin flow. It is provided with a pressure clip (13). The pressure clip is height-adjustable and can be shifted to the side (left or right) depending whether the dispenser handle is released with the mold or the finger ①.

The dispenser handle can be operated by simply pushing the mold (or the finger) against the pressure clip. Slightly pushing the handle backwards will open the dispenser valve ②. Once released, the handle flips back in the original position and the valve shuts.

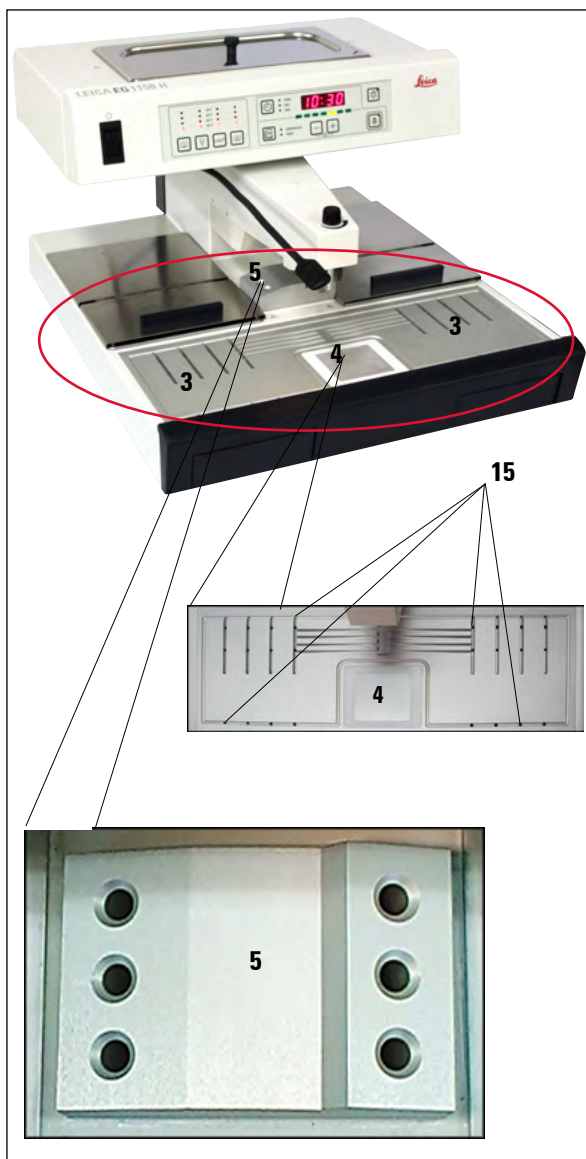


Fig. 11



**The forceps holder is constantly heated to approximately 70 °C.
Risk of burning!**

Work top (3)

The temperature of the work top can be adjusted between 55 °C and 70 °C in 5 K increments. This includes the embedding area, forceps holder (5) and the cooling spot (4).

The working area has a groove around it and several drain holes (15), through which excess paraffin rapidly drains.

Cooling spot (4)

The cooling spot is an integral part of the work area. Its position directly in front of the embedding area enables convenient working in ergonomically most favorable conditions.

To orientate the samples, the mold is filled about one third with liquid paraffin. The liquid paraffin begins to solidify rapidly on the cooling spot.

While the paraffin is semi-liquid, the sample can be oriented as required. Finally, the mold can rapidly be filled up with paraffin.



While orienting the tissue, the paraffin should not become too solid, as this may cause different phases in the finished block, including fissures inside, as a result of which the block may break during sectioning.

Forceps holder (5)

The removable forceps holder under the dispenser can accommodate up to 6 forceps.

5. Operation

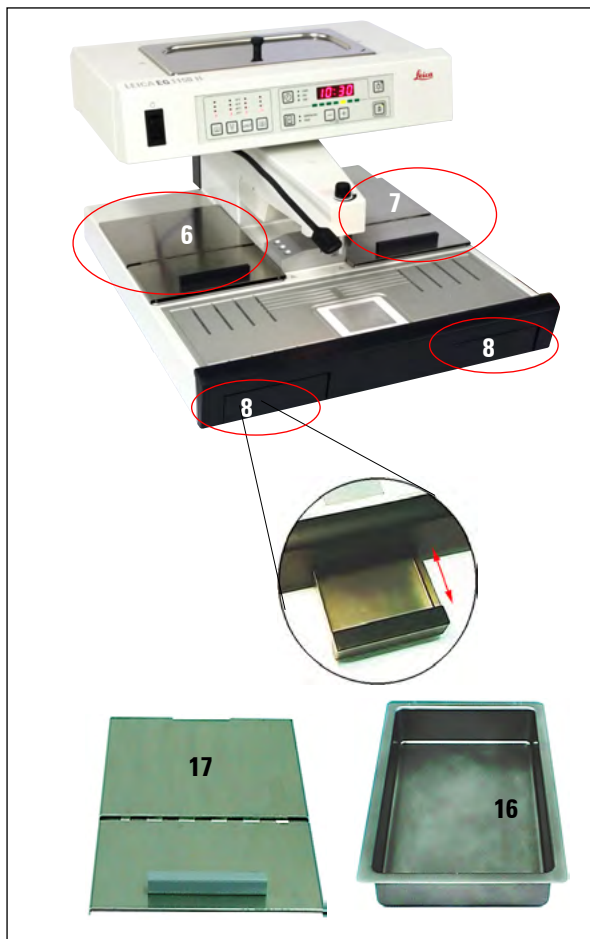


Fig. 12

Paraffin collection tray (8)

Two indirectly-heated paraffin collection trays for excess paraffin are located under the work surface.



The paraffin collection tray must be emptied daily. To prevent contamination, do not reuse paraffin collected in this tray.

If the instrument is operated without the paraffin collection trays there is risk of burning.

Embedding mold tray and cassette tray (16)

Depending on the preferred working direction, the two heated instrument trays (6, 7) can be used for embedding molds or cassettes. The temperature is adjustable between 55 °C and 70 °C.

A removable tray (16) for cassettes or embedding molds can be placed in each instrument tray.

Each receptacle can hold approx. 100 cassettes or approx. 50 molds.

A lid (17) is provided for each of the trays (16) to prevent loss of heat and contamination inside the tray. For easy access, the lid can be slid back and folded up.



When working with half-open lids (17), raise the temperature one level to ensure that the paraffin remains molten.



Only operate the cassette and embedding mold tray and paraffin reservoir with lid; otherwise the set temperature cannot be maintained.



Fig. 13

Standby switch (8)

After the unit has been commissioned, the standby switch should only be used if the unit is to be switched off for a longer period of time.

In daily routine operation, the **ON/OFF** button on the control panel should be used.

Pressing the **ON/OFF** button (20) switches the instrument into active standby mode.

All displays are switched off, only the LED (21) of the **ON/OFF** button remains lit.



If programmed procedures are to be carried out: the standby switch (8) must be switched on and the unit must be in standby mode.

For more information, see [Chapter 5.4](#)

Work area illumination (9)

A non-glare light system for the working area provides homogeneous diffuse illumination of the embedding area and cooling spot. This produces optimum visibility conditions when pouring out the paraffin and positioning the specimen.

To turn on the LED lamp for the first time after the instrument goes into the active mode, press the button (18) on the control panel and on/off button (19) on the lamp head successively. It is recommended to turn the LED lamp on/off through the button (19) on the lamp head during daily operation.

5. Operation

Foot switch (22) optional

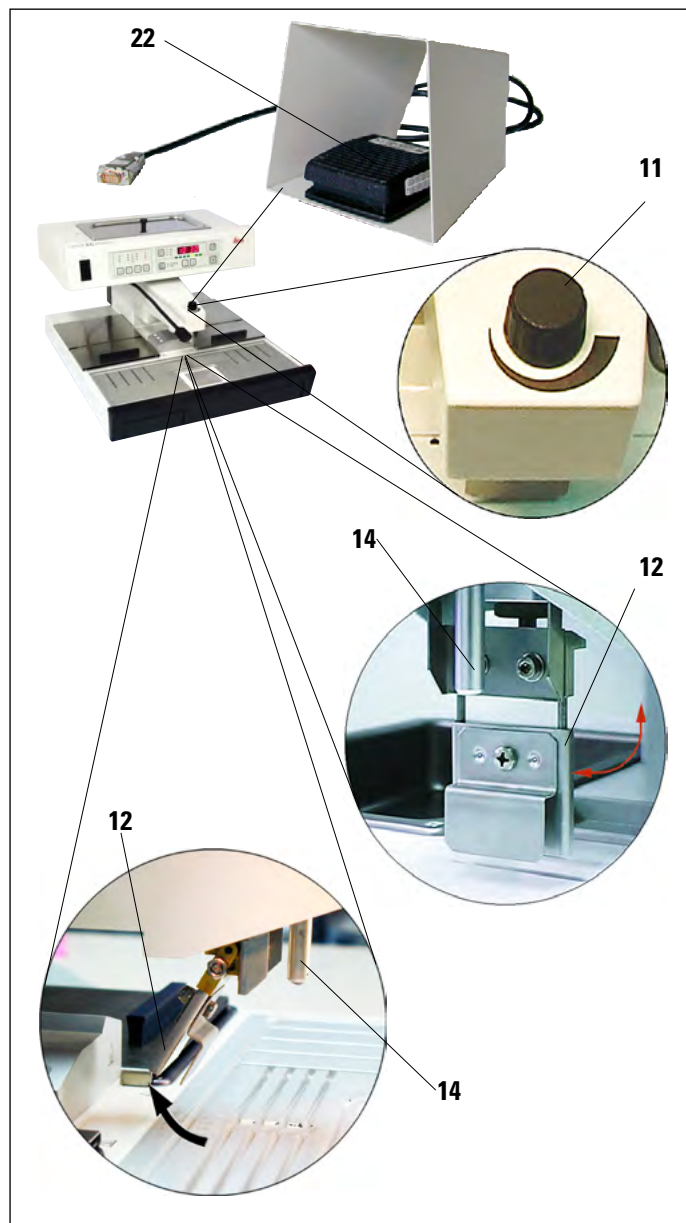


Fig. 14

The foot switch (22) actuates the magnet valve of the dispenser. It must be connected as described in [Chapter 4.6](#).



The plug of the foot switch **MUST** be screwed to the socket. Otherwise hot paraffin can escape, even if the switch is not activated.

Pressing the foot switch opens the valve, releasing it closes it. This keeps the operator's hands free to work with the instrument.

The flow volume can be adjusted with the metering screw (11).

The dispenser handle (12) is not required when using the foot switch and can be folded upwards.

Proceed as follows:

- Set the metering screw (11) to minimum.
- Carefully fold the dispenser handle (12) back/up with your thumb and index finger.



Take care when folding back the dispenser handle! Hot paraffin may come out of the filler tube (14).

DANGER OF BURNS!

5.2 Switching the instrument on



Fig. 15

- Activate the standby switch (left-hand side, next to control panel) (see Fig. 15, 17).
- All LEDs of the operating panel light up briefly and the installed software version is shown on the display for around 2 seconds. All displays go out, the unit changes to standby mode. The green LED in the **ON/OFF** button indicates that the instrument is ready to operate.



- Press the **ON/OFF** button down for approx. 2 seconds to switch over to the operating mode. The time indicator flashes on the display, indicating that the instrument has been disconnected from the power supply. Press any key to acknowledge.



The unit's normal operating mode is STANDBY/ON; i.e. switch on/off with the ON/OFF key only. Use the standby switch only if the device is to be switched off for an extended period.

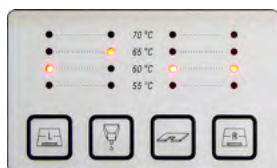


Fig. 16

- The heaters become active and the LEDs indicate the values last set. The target value LEDs for the heating areas (**1, 3, and 4** in Fig. 18) flash quickly for the duration of the heating phase (cf. "Display of the heating intervals"). The LED for the paraffin reservoir (**2** in Fig. 18) flashes in 1-second intervals and thereby indicates the intensified heating of the paraffin reservoir (for 4 hours). If temperature settings are modified during the heating phase, the instrument will store the new settings and the heating phase will then correspondingly take longer.
- Fill the paraffin reservoir with paraffin.



Prior to leaving the factory, the Leica EG1150 H is tested thoroughly under laboratory conditions. For this reason, you will find a small quantity of clean, hardened paraffin. You can work with this paraffin without any problem.

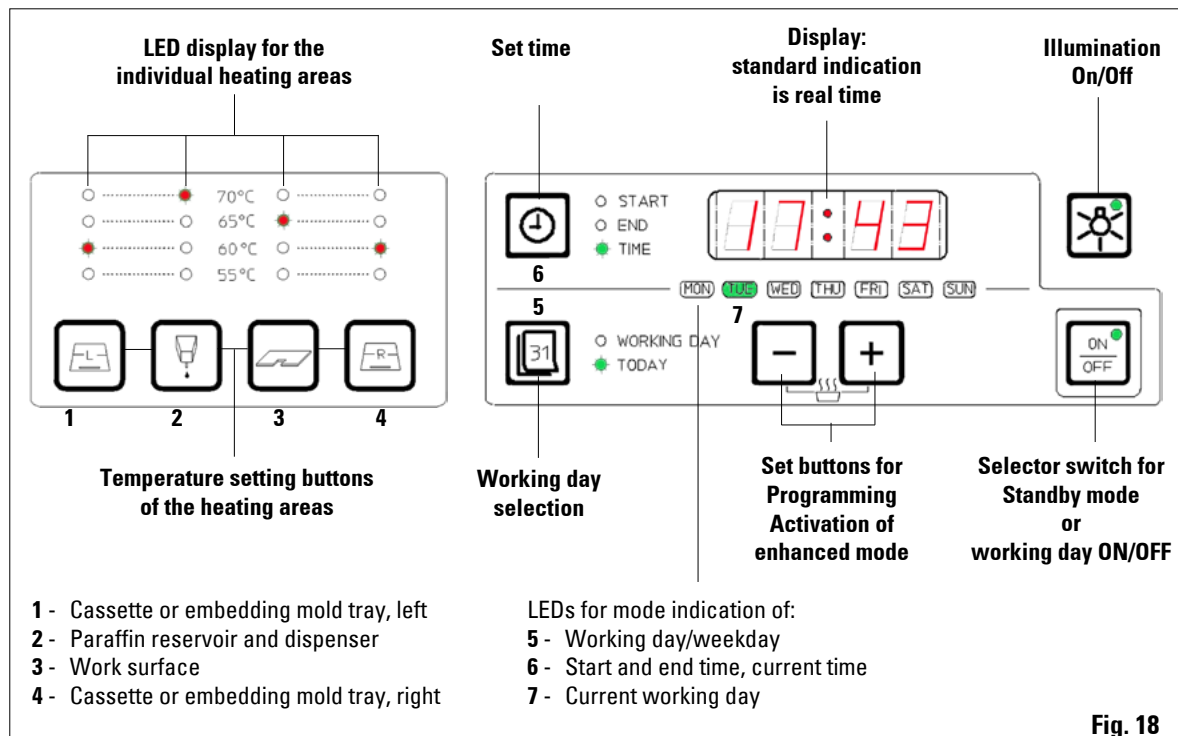
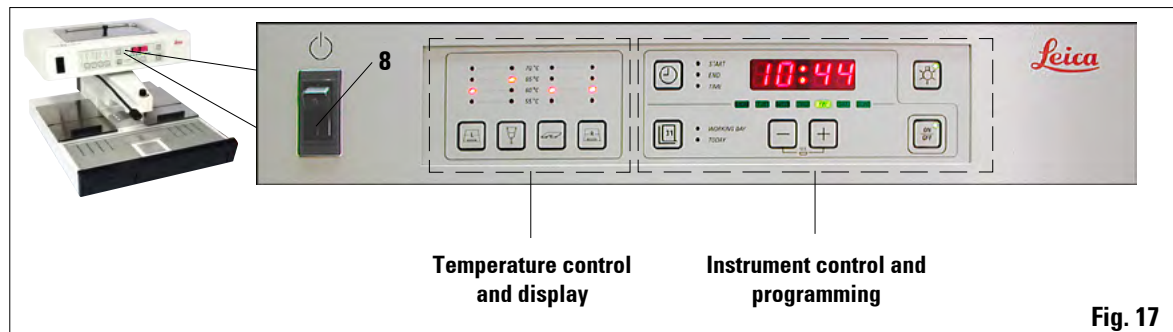
5. Operation

5.3 Control panel functions

The control panel beside the standby switch (8) consists of a foil keyboard with push buttons, LEDs and a single-line display.

It is divided into two control areas:

temperature setting and display and instrument control and programming.



5.4 Operating modes

Standby mode

The display and all LEDs are switched off in standby mode. The unit switches on or off automatically at the programmed start and ending times. Only the green LED (21) in the **ON/OFF** button indicates that the instrument is ready to operate.



Enabling operating mode

- Hold down the **ON/OFF** button for approx. 2 seconds.
- The instrument switches from standby mode to operating mode. The LEDs of the currently selected values are illuminated, the display reads the current time.



The time in the display flashes when switching to operating mode if the device was disconnected from AC power for an extended period (> 5 min).

Acknowledge the flashing display by pressing any button and check whether all required heating phases (especially the paraffin reservoir) are complete.

24-hour mode – working in shift mode

If the switch-on and switch off times of the timer are set to the same value, the instrument will run continuously, even on days that are not defined as work days.

Example: Start time = **00:00** and end time = **00:00**.

To set the timer, see [Chapter 5.5](#)



Important

The timer is disabled if the end time is before the start time. For example, start time: 08:00 and end time: 06:00.



In 24-hour mode, activate enhanced mode (see [Ch. 5.6](#)) to accelerate the melting process after replenishing solid paraffin.

5. Operation

5.5 Time-program control

The value shown in the display must be set to the current local time to ensure the correct operation of the time-program control.

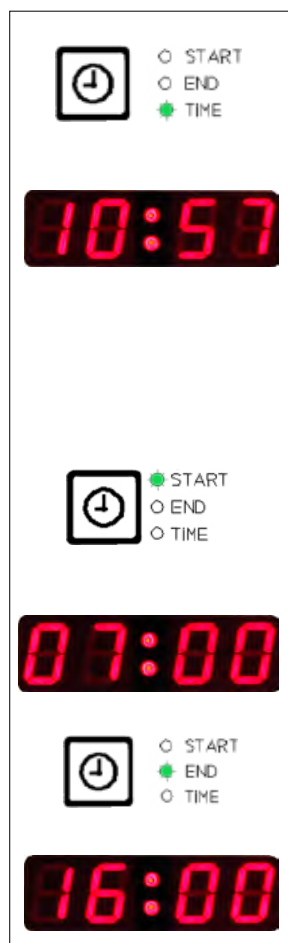


Fig. 19

Setting the time

- **Press the CLOCK** button as many times as required until the green "TIME" LED lights up.
- Set the current time with the $\boxed{+}$ / $\boxed{-}$ buttons. The required value is reached faster when holding down the button in question.

Start time

The start time is the time at which the instrument automatically switches from standby to operating mode.

Setting the start-of-work and end-of-work times:

- **Press the CLOCK** button as many times as required until the green LED "START" lights up.
- Set the start time with the $\boxed{+}$ / $\boxed{-}$ buttons. The required value is reached faster when holding down the button in question.

End time

Automatic switch-over of the unit from operating to standby mode takes place at the set ending time.

Setting the start-of-work and end-of-work times:

- **Press the CLOCK** button as many times as required until the green "END" LED lights up. Set the time as described above.



All the set times are stored until they are changed, even if the instrument is switched off with the standby switch.



Weekdays/working days

The automatic switch-on feature is linked with the individual weekdays. It is therefore necessary to define the days for which the automatic switch-on feature shall operate.



Only on those weekdays that have been defined as working days, the instrument will be at the required temperature and ready to operate.

Setting the current weekday:

- **Press the DAY** button as many times as required until the green "TODAY" LED lights up. The green LED of the current weekday is illuminated.
- If necessary, set the current day with the  /  buttons - the associated LED lights up.

Defining the working days:



- **Press the DAY** button as many times as required until the green LED "WORKING DAY" lights up. The LEDs of the weekdays defined as working days light up, while the LED of the current day flashes.
- Use the  /  buttons to select the day to be defined or canceled as the working day. The LED of the selected day (**FRI**) flashes.
- **Press the ON/OFF** button.
If that day had not been a working day (LED off), it will now be added to the working day list (LED on).
Otherwise (see Fig. 20, **FRI** was defined as a working day, LED on), the day will no longer be defined as a working day (LED off).



Fig. 20



If the programmed values are to be effective on the following days (the instrument is operational at the programmed time and switches off automatically when the end time is reached), the standby mode must be active --> press ON/OFF.

5. Operation

5.6 Instrument heater

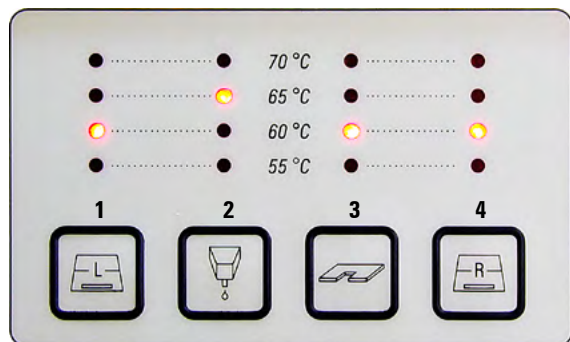


Fig. 21

- 1 - Cassette/embedding mold tray, left
- 2 - Paraffin reservoir/Dispenser
- 3 - Temperature of work area
- 4 - Cassette/embedding mold tray, right

Setting temperature values

The temperatures for the instrument's four heating areas can be adjusted separately from 55 °C to 70 °C in 5 K increments.



When setting the temperature, please observe the paraffin manufacturer's specifications for the maximum permissible temperature.

Press the buttons for the temperature range once to increase the value by 5 K. The red LED for the associated temperature value will light up – after 70 °C has been reached, the temperature will revert to 55 °C.

Once set, the temperature value for one range will be retained until it is changed.

Indication of the heating intervals

In the display field for the temperature ranges, the LED for the set temperature will always be lit. While heating for the area in question is active, the LED flashes as long as heating continues.

It is possible to deactivate the heating activity display (and thereby the flashing).

Proceed as follows:

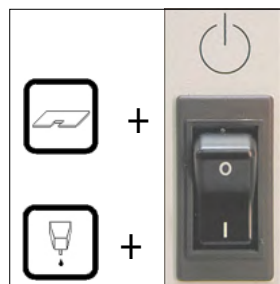


Fig. 22

- Switch off the instrument with the standby switch (⏻, not **ON/OFF**).
- Hold down the **WORK AREA** button and switch the instrument on again with the standby switch.
- To return to the "flashing" mode, switch off the instrument with standby switch as described under 1. Hold down the **PARAFFIN DISPENSER** button when switching back on.

Advance times

To ensure that the instrument is ready (all working temperatures reached) at the programmed start time, the various sections are activated in advance as follows:

Paraffin tank:	Heating starts 4 hours before working time begins.
Work top:	Heating starts 4 hours before working time begins.
Dispenser tube:	Heating starts 1 hour before working time begins.
Cooling spot:	Cooling starts 1 hour before working time begins.

Display



During the heating phase, the display reads - - : - - ; the colon flashes in intervals of seconds.

The advance times cannot be modified.

Enhanced mode

A large amount of heat is needed for melting paraffin. This is only accounted for in standby mode for a respective preliminary time. In the operating mode, the paraffin reservoir is heated just enough to maintain the paraffin at the selected temperature. Therefore the melting process can be sped up by increasing the heat supply (enhanced mode) whenever necessary (e.g. when solid paraffin has to be added to the reservoir when working in shifts). The paraffin reservoir is then heated for a period of four hours to a higher temperature (enhanced mode).

Press simultaneously

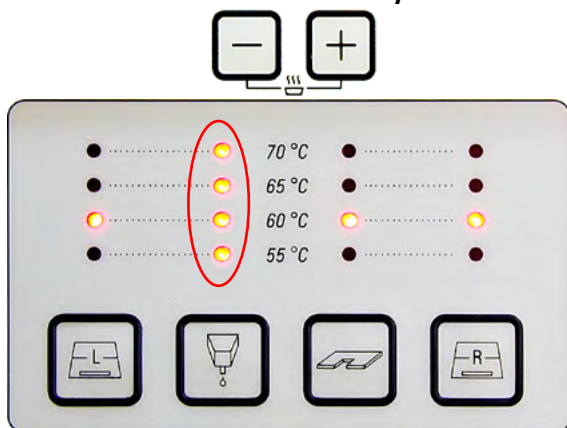


Fig. 23

To activate the enhanced mode, push and hold the $\boxed{+}$ and $\boxed{-}$ buttons simultaneously.

The brief lighting up of all four target value LEDs of the paraffin reservoir confirms that the on-demand heater has been activated. In other words, the buttons have to be held until all 4 LEDs light up.

The selected set value LED flashes while enhanced mode is enabled.

The enhanced mode can be switched off at any time by pressing and holding the same key combination. Deactivation of the on-demand heater is also confirmed by all four target value LEDs lighting up.

6. Maintenance and Cleaning

6.1 Cleaning the instrument



Do not use xylene for cleaning. Xylene vapors are heavier than air and can ignite at a considerable distance from the source of heat.

A fire hazard exists!

To avoid scratching the surface of the instrument only the plastic spatula that is supplied with it should be used for cleaning – on no account use metal tools!

Work surfaces

- All common laboratory cleaning products suitable for the removal of paraffin (e.g. Paraguard or xylene substitutes) can be used to clean the work area.
- Avoid prolonged contact of organic solvents on the surface of the instrument.

Paraffin reservoir

- Keep contaminants out of the paraffin reservoir.
- Ensure that a residual amount of paraffin remains in the reservoir after draining to prevent solid contaminants from entering the dispenser.
- Absorb this paraffin with tissue or a paper towel. Do not remove the screen until the residual paraffin has been removed.
- The interior surfaces of the reservoir can then be cleaned with a tissue.

Forceps holder

- The forceps holder is often a source of contamination and extremely susceptible to dirt. Therefore, clean the forceps holder thoroughly.



Important!

The forceps holder is constantly heated to approximately 70 °C. Risk of burning!

Paraffin collection tray

- Before the paraffin collection tray drawers can be emptied, any excess paraffin on the work area must be removed with cellulose wadding in order to prevent any paraffin from penetrating into the instrument.



Use care with paraffins with a low melting point - risk of burning when removing the paraffin collection trays due to liquid paraffin.

- Only remove and empty the paraffin collection trays while they are warm.
- The paraffin in the collection trays must not be reused. Danger of paraffin carry-over into the instrument.
- Empty both paraffin collection trays regularly in order to prevent them from overflowing into the instrument. While emptying intervals may vary depending on use, the trays should be emptied at least daily.



If the paraffin collection trays are not emptied regularly, excess paraffin may flow into the instrument or onto the work surface. This presents a burn hazard and may damage the instrument.

6.2 Maintenance instructions



Only Leica service technicians are authorized to open the instrument for maintenance and repair work.

The Leica EG1150 H is very low maintenance but please observe the following points to ensure the instrument's reliability.

- Clean the instrument with care daily.
- Regularly remove dust from the ventilation slots on the back of the instrument with a brush or vacuum cleaner.
- Have the instrument inspected at least once a year by an authorized Leica customer service technician.
- Enter into a service contract at the end of the warranty period. For more information, contact the relevant customer service organization.

7. Troubleshooting


7.1 Possible faults

This chapter will help you remedy problems that may occur when working with Leica EG1150H.

If a problem cannot be remedied by following the instructions in this chapter, please contact your Leica technical service center.


For further instructions, please refer to Chapter 8.

The table below lists the most common problems that may occur as well as possible causes and remedies.

Problem	Possible cause	Corrective action
1. Display: The  message appears in the display. The colon flashes.	<ul style="list-style-type: none">- The instrument is in the heating phase (standby mode).	<ul style="list-style-type: none">- This is not an error! The instrument will switch to the operating mode at the programmed start time.
2. Instrument doesn't work.	<ul style="list-style-type: none">- Standby switch is not turned on or- Cut-out function of the standby switch has been activated.- ON/OFF button has not been pressed long enough.	<ul style="list-style-type: none">- Standby switch ON.- Check instrument's connection, then turn standby switch on.- Hold down ON/OFF button for several seconds (at least 2 secs)

Problem	Possible cause	Corrective action
3. Paraffin reservoir Paraffin does not melt or melts only very slowly.	<ul style="list-style-type: none"> - Selected temperature too low. - No enhanced mode set. - Temperature indication incorrect, or paraffin reservoir is not heated. - Incorrect start time selected. - Fuse for the heater of the paraffin reservoir activated. - Technical fault. 	<ul style="list-style-type: none"> - Increase temperature for paraffin reservoir. - Activate on-demand heater. (see Chapter 5.6) - Check temperature settings and repeat if necessary. - Check start time. - Check fuses and replace as required. (see Chapter 7.3) - Contact customer service.
4. Paraffin dispenser No paraffin flow. Paraffin drops when valve is shut. Non-homogeneous paraffin flow (e.g. air pockets).	<ul style="list-style-type: none"> - Paraffin not completely molten. - The paraffin outlet is clogged or the magnetic switch defective. - Air bubbles in dispenser at start of operation 	<ul style="list-style-type: none"> - Wait until paraffin is entirely molten; then check again. - Contact customer service. - Keep dispenser open at maximum flow for a period of time.

7. Troubleshooting

Problem	Possible cause	Corrective action
5. Illumination does not work.	<ul style="list-style-type: none">- Button on the head of the lamp has not been pressed.- Bulb defective.- Fuse defective.	<ul style="list-style-type: none">- Press the On/Off button on the head of the lamp.- Ask technical service to replace the lamp.- Change fuse. (See Chapter 7.3)
6. Individual heating areas (Despite correct temperature indication) heating does not work.	<ul style="list-style-type: none">- Fuse for this heated area has responded.- Heater defective.	<ul style="list-style-type: none">- Change fuse. (see Chapter 7.3)- Contact customer service.
7. Error message in display The  message appears in the display. Program and time are lost.	<ul style="list-style-type: none">- The battery is empty and also- Power failure or- Device switched off with stand-by switch or- Power plug disconnected.	<ul style="list-style-type: none">- Acknowledge fault by pressing any key. Work can resume after reprogramming.Important! Do not disconnect the instrument from the power supply anymore. Ask technical service to replace battery.

7.2 Changing a fuse



Before changing a fuse switch the instrument off and pull out the power plug. Use ONLY the provided replacement fuses.

Important!

The instrument has a number of circuits that are protected by fuses with different values. Observe the following instructions exactly to ensure that the correct spare fuse is used for the matching fuse holder.

The instrument has five electrical areas with separate secondary fuse protection. The secondary fuses are located in individual fuse inserts at the back of the instrument.

The secondary fuses are secured with two metal plates (6, 7) that must be removed first.

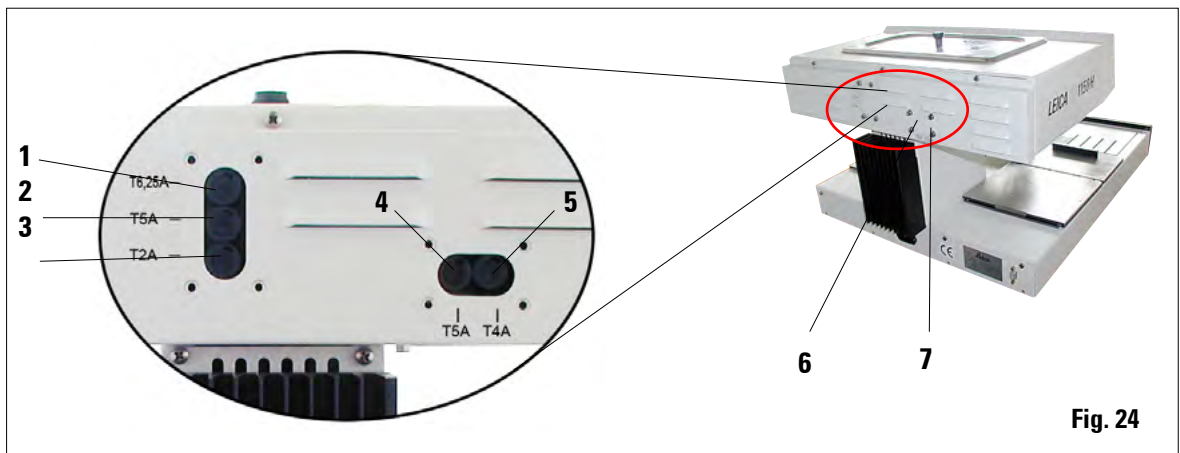


Fig. 24

The individual fuses apply to the following areas:

- 1** - Peltier element of the cooling spot and work area illumination.
- 2** - Heating for forceps holder and dispenser.
- 3** - Control electronics.
- 4** - Heating for work top and cassette tray, right.
- 5** - Heating for paraffin reservoir and cassette tray, left.

7. Troubleshooting

Select the correct spare fuse

This marking (2A) on the fuse and the labeling next to the fuse holder on the rear of the instrument **MUST** agree!

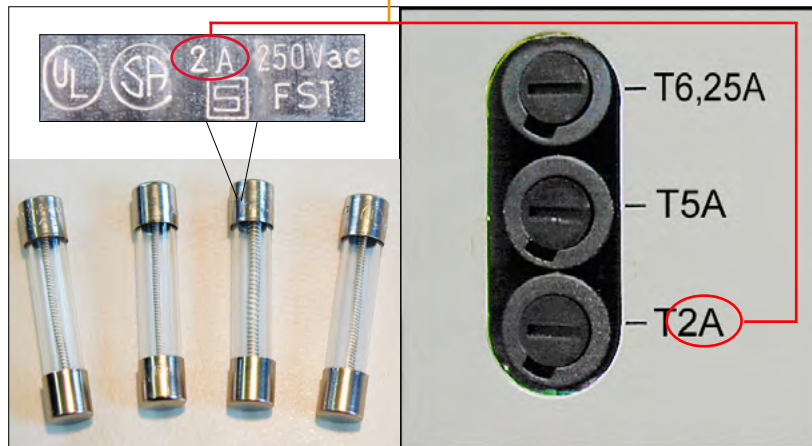


Fig. 25

The metal caps on the spare fuses are labeled - the labeling looks similar to that shown in the figure above, but can vary depending on the type of fuse.

The labeling important for the correct allocation stands for the current intensity to be protected by the fuse (in the marked example: **T2A**)

Change fuse

Using a screwdriver (8) lightly press in the fuse holder (9) and then turn anti-clockwise one 1/4 turn and let go.

The fuse holder is pressed out and can be removed.

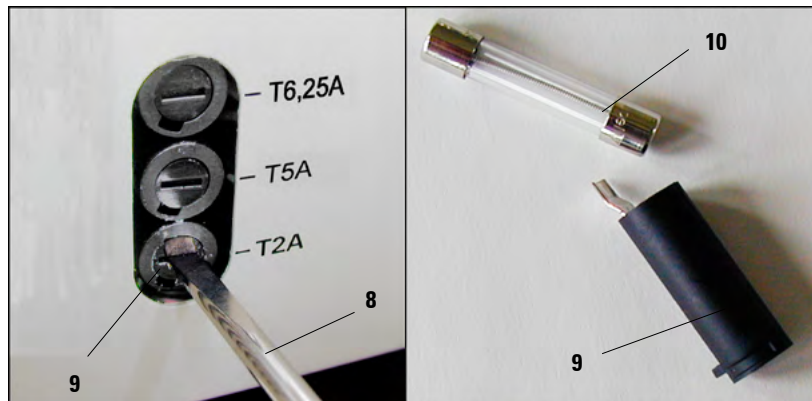


Fig. 26

On the back there are five different fuse holders (Fig. 24).

One spare fuse must be selected from the five spare fuses available that has the marking **2A** written on it. (see Fig. 25, left)

Only the spare fuse with the marking **2A** may be inserted in this fuse holder (**T2A**).

This is also applicable in the same way for the other fuse holders.

Take the defective fuse (10) out of the fuse holder (9) and replace it by the selected spare fuse.

Insert the fuse holder with the spare fuse, press in using screwdriver (1) and secure by turning it clockwise 1/4 turn.

Replace fuse cover (6,7).

Warranty

Leica Biosystems Nussloch GmbH guarantees that the contractual product delivered has been subjected to a comprehensive quality control procedure based on the Leica in-house testing standards, and that the product is faultless and complies with all technical specifications and/or characteristics warranted.

The scope of the warranty is based on the content of the concluded agreement. The warranty terms of your Leica sales organization or the organization from which you have purchased the contractual product shall apply exclusively.

Service information

If you require technical service or replacement parts, please contact your Leica sales representative or dealer who sold the product.

Please provide the following information:

- Model name and serial number of the instrument.
- Location of the instrument and name of the person to contact.
- Reason for the service call.
- Date of delivery.

Decommissioning and disposal

The instrument or parts of the instrument must be disposed of in compliance with the local laws.

9. Decontamination Certificate (Master)

Dear Customer,

Any product that is to be returned to Leica Biosystems or serviced on site, must be cleaned and decontaminated in the appropriate manner. Since it is not possible to decontaminate for prion diseases, such as CJD, BSE, CWD etc., equipment exposed to specimens containing prion diseases cannot be returned to Leica Biosystems for repair. On-site repair of prion contaminated equipment will only be conducted after the Field Service Engineer has been educated in the risks, instructed in the policies and procedures of the institution, and provided with personal protective equipment. Please fill out this confirmation carefully and enclose a copy with the instrument. Attach the confirmation to the outside of the flight case or hand it directly to the service technician.

Packages will not be opened, nor servicing commenced until the Company or service engineer have received a satisfactory certificate. Should returned goods be considered a hazard by the Company, they will be returned immediately to the customer at his/her expense. **Note:** Microtome knives must be in boxes.

Mandatory information: Fields marked with * are mandatory. Depending on whether the instrument is contaminated, please also complete either section A or section B.

Nameplate information

Model (see nameplate)*

SN (see nameplate)*

REF (see nameplate)*

Tick Box A if applicable. Otherwise please complete all parts of B, providing further information as requested or appropriate.

A

Yes

☐

This equipment has not been in contact with unfixed biological samples.

B

Yes

☐

No

☐

1

This equipment has been exposed internally or externally to hazardous materials as indicated below:

Blood, body fluids, pathological samples

Other biohazards

Chemicals/substances hazardous to health

Other hazards

Radioactivity

Please provide further detail here:

Yes

☐

No

☐

2

This equipment has been cleaned and decontaminated:

If yes, give details of the method:

Please provide further detail here:

If no**, please indicate why not:

Yes

☐

No

☐

3

The equipment has been prepared to ensure safe handling/transportation. Whenever possible, please use the original transportation case/box.

** Such equipment must not be returned without the written agreement of Leica Biosystems.

9. Decontamination Certificate (Master)

Important - to avoid refusal of shipment:

Place one copy in the unit prior to packaging, or hand it over to the service engineer. Customer assumes all responsibility for the immediate return shipment of articles sent to Leica without proper decontamination documentation.

If you have any further questions, please call your local Leica organization.

Leica Internal Use: If applicable, note corresponding Job and RAN-/RGA-Number:

Job Sheet No.: _____ BU Return Authorization Number: _____ SU Return Goods Authorization: _____

Signature/Date*

Name*

Position*

eMail

Institute*

Department*

Address*

Phone*

Fax

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